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NOMENCLATURAL NOTES ON THE ANURA (AMPHIBIA)

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Abstract.—The status and availability of the family-group names Hylodidae, Allophrynidae, and Pelodryadidae and the generic name *Crepidus* are reviewed and clarified.

Through the kindness of several colleagues, a number of nomenclatural problems or inconsistencies with the International Code of Zoological Nomenclature (reference to pertinent articles of the Code are indicated as Art. in the rest of this paper) that have appeared or been perpetuated by my published works, have been recently called to my attention. Three of these relate to the use of family-group names in the classification proposed for my biogeographical analysis of frog distribution (1973), the other to the correct name of an endemic Central American bufonid.

In the original manuscript (completed in 1971) of my 1973 paper, documentation for several novel features of classification was provided but later removed in the editing process. This circumstance makes ambiguous certain family-group names used in that report and adopted by several subsequent authors. The first of these is the name Hylodinae for a subfamily of the Leptodactylidae. The family-group name Hylodidae was originally proposed by Günther (1859) for the genera *Crossodactylus, Phyllobates, Hylodes,* and *Platymantis.* The type-genus is *Hylodes* Fitzinger, 1826 (monotype: *Hyla ranoides* Spix, 1824, a synonym of *Hyla nasus* Lichtenstein, 1823). Several authors including Myers (1962) and Lynch (1971) argue that Fitzinger proposed exactly the same generic name again in 1843 for a second genus of frogs. It is clear from the 1843 work that this is not the case as the name is listed as *Hylodes* (Fitz.), which in this paper represents a genus previously named. As pointed out by Fitzinger (footnote p. 15), the parentheses around the author's name indicate that the scientific name was proposed by that person, but is not used by Fitzinger strictly in its original sense (i.e., to have the same composition). Thus *Leptodactylus* (Fitz.), *Rana* (Linné), and *Hyla* (Laurent) as well as others are so listed. Names newly proposed in the paper lack an indication of Fitzinger's name, as for example *Limnodynastes* and *Lithodytes.* Fitzinger (1843) designated *Hylodes martinicensis* Tschudi, 1838, as the type of the subgenus *Hylodes,* but because this form was not included in the original description of the genus-group name, it cannot be considered the type-species (Art. 67g). In addition, the type-species of *Hylodes* was established in 1826 as *Hyla ranoides* Spix (by monotypy) since the only other species included by Fitzinger in the genus was *Hylodes gravenhorstii* Fitzinger, a nomen nudum. Obviously, Fitzinger had no way to know that things would work out this way since there were no commonly accepted rules relating to nomenclature in his day. Consequently, contrary to the argument of Lynch (1971), the type of the family-group name Hylodidae (and Hylodinae) is *Hylodes* Fitzinger, 1826. This name has priority over Elosiinae Miranda-Ribeiro (1926) under Art. 23 and the latter has no claim for exemption, under Art. 40b, as having won general acceptance prior to 1961.

The second problem relates to my use of

the family-group name Allophrynidae (monotypic for the genus *Allophryne* Gaige, 1926). Mention of the family name by me did not constitute an appropriate proposal of a new name under Art. 13 of the Code and the name was not made available by my action. To remedy the situation, I herewith reintroduce the name Allophrynidae for the single genus and species *Allophryne ruthveni* Gaige, 1926. This family is characterized by the features presented by Lynch and Freeman (1966), who give a description and definition of *Allophryne* which separates it from all currently recognized families of frogs. I have elsewhere (Savage 1973) suggested that the family is a derivative of a leptodactylid ancestor and cannot be placed in the Hylidae as proposed by Lynch and Freeman (1966) and Dowling and Duellman (1978).

A third matter involves the use of the name Pelodryadidae Günther, 1859, for the Australopapuan tree-frogs allied to the genus *Litoria* and often placed in the family Hylidae. When I (1973) proposed that the Pelodryadidae be recognized, it was on the basis of the throat muscle characteristic used by Tyler (1971) to separate the Australopapuan forms from the New World hylids. Since that time, although few have recognized the pelodryadids as a separate family, the family-group name Pelodryadinae has been used as a subfamilial appellation (Dowling and Duellman 1978; Tyler 1979). Unfortunately, the generic type of this taxon, *Pelodryas* Günther, 1859 (monotype: *Rana caerulea* White, 1790) is often regarded as a subjective, junior synonym of *Litoria* Tschudi, 1838 (monotype: *Litoria freycineti* Tschudi, 1838). Some will argue that the proper name for this family-group should have been proposed as "Litoriidae" from the oldest generic name. However, Pelodryadidae is the oldest available name for this taxon, since the family-group name Pelobii Fitzinger, 1843 (type–genus *Pelobius* Fitzinger, 1843, with *Litoria freycineti* as monotype) is preoccupied in Coleoptera by Pelobini Erichson, 1832 (generic type and senior homonym to Fitzinger's genus: *Pelobius* Erichson, 1832) and no one has ever proposed "Litoriidae" as a name. In addition, I was convined that the type-species, the well-known large, green tree-frog (*Pelodryas caeruleus*) was generically distinct from the type-species of *Litoria* (*L. freycineti*). Since that time a second species has been described (named *Litoria splendida* by Tyler, Davies, and Martin 1977) which is closely allied to *caeruleus* and should also be placed in *Pelodryas* according to the characteristics presented by Tyler and Davies (1978). The following features taken from the latter report diagnose the genus: large green frogs with broadly fringed and partially webbed fingers: cartilaginous intercalary elements in digits; hyoid plate with pedunculate alary processes; prominent parotoid or supracranial glands.

For these several reasons, the appropriate family-group name for Australopapuan tree-frogs is Pelodryadidae. If subsequent workers decide to replace *Pelodryas* in the synonymy of *Litoria,* Art. 40a provides that the family-group name will remain Pelodryadidae.

The final problem relates to the correct generic name for the lower Central American toad originally described by Cope (1875) as *Crepidius epioticus.* In 1966, I pointed out that the name *Crepidius* Cope is preoccupied by *Crepidius* Candeze, 1859, in Coleoptera and used the replacement name *Crepidophryne* Cope, 1889, for *epioticus,* the sole species placed in the genus. In doing so I overlooked the use by Brocchi (1882) of the name *Crepidus* for this taxon. Brocchi lists the name as *Crepidus* Cope and cites Cope's 1875 usage as *Crepidus* (sic), "Cope, *On the Batr. and Rept of Costa Rica* . . . ." The sole included species is also listed as *Crepidus epioticus.* Brocchi obviously had no intention of proposing a new name for Cope's genus so that *Crepidus* must be either a correction of the original spelling, an unjustified emendation of the spelling of *Cre-*

pidius or an incorrect subsequent spelling. Under Art. 33c misspellings have no independent status in nomenclature but a correction of an original spelling (Art. 32d) or even an unjustified emendation (Art. 33b) must be regarded as an available name. If *Crepidus* is recognized as a correction of an original spelling or as an unjustified emendation it becomes available and has priority over *Crepidophryne.*

In this case it is very difficult to determine which of the three possibilities apply. 1) Brocchi may have concluded that the correct classical spelling for *Crepidius* was *Crepidus* (a correction of an incorrect original spelling); his citation of Cope as the author of *Creidus* supports this view. 2) on the other hand, he may have misspelled Cope's genus as *Crepidus*; 3) or then again, he may have preferred *Crepidus* over *Crepidius,* as an alternate acceptable classically correct spelling, to produce an unjustified emendation of the former name.

It appears that alternate 1 is the most likely since Brocchi lists Cope as the author of *Crepidus.* There is no way to establish that alternate 2 is correct. Alternate 3 requires that Brocchi chose to modify Cope's spelling for some other reason than to correct the original spelling. However, Art. 33b requires that Brocchi use of *Crepidus* instead of *Crepidius* is demonstrably intentional. Since this cannot be done, *Crepidus* must stand as an incorrect subsequent spelling (Art. 33c) and has no standing. The name *Crepidophryne* Cope, 1889 (monotype: *Crepidius epioticus* Cope, 1875) stands as the correct name for the taxon involved and replaces the preoccupied name *Crepidius* Cope, 1875, with the same monotype.

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Literature Cited

Brocchi, M. 1882. Etude des Batraciens de l' Amerique Centrale.—Mission scientifique au Mexique 3(2):57–96.

Candeze, E. 1859. Monographie des Elaterides. Tome II.—Memoires de la Société Science Liége 14: 1–543.

Cope, E. D. 1875. On the Batrachia and Reptilia of Costa Rica.—Journal of the Academy of Natural Sciences of Philadelphia (letter-press) ser. 2,8:93–157.

———. 1889. The Batrachia of North America.—Bulletin of the United States National Museum 34:1–515.

Dowling, H. G., and W. E. Duellman. 1978. Systematic herpetology: A synopsis of families and higher categories. Herpetological Information Search Systems (HISS) Publications, New York. 118 pp.

Erichson, W. F. 1832. Genera Dyticeorum. Dissertatio inauguralis, Berlin, pp. 1–48.

Fitzinger, L. J. F. J. 1843. Systema Reptilium. Vienna.

———. 1826. Neue Classification der Reptilien. Vienna.

Gaige, H. T. 1926. A new frog from British Guiana.—Occasional Papers Museum of Zoology, University of Michigan 176:1–3.

Günther, A. C. L. G. 1859. Catalogue of colubrine snakes in the collection of the British Museum. Taylor and Francis, London.

International Commission on Zoological Nomenclature. 1985. International Code of Zoological Nomenclature, 3rd. ed. London.

Lichtenstein, H. 1823. Verzeichniss der Doubletten des Zoologischen Museums Konigl. Universität zu Berlin. Berlin. 48 pp.

Lynch, J. D. 1971. Evolutionary relationships, osteology and zoogeography of leptodactylid frogs.—Miscellaneous Publications University of Kansas Museum of Natural History 53:1–238.

———, and H. L. Freeman. 1966. Systematic status of a South American frog, *Allophryne ruthveni* Gaige.—University of Kansas Publications Museum Natural History 17(10):493–502.

Miranda-Ribeiro, A. 1926. Notas para servirem ao estudio dos gymnobatrachios (Anura) Brasileiros.—Archivos Museo Nacional Rio de Janeiro 27:1–227.

Myers, G. S. 1962. The American leptodactylid frog genera *Eleutherodactylus, Hylodes* (= *Elosia*), and *Caudiverbera* (= *Calyptocephalus*).—Copeia 1962(1):195–202.

Parker, H. W. 1940. The Australasian Frogs of the Family Leptodactylidae.—Novitates Zoologicae, Tring Museum 42(1):1–106.

Savage, J. M. 1973. The geographic distribution of frogs. *In* J. L. Vial, ed. Evolutionary biology of the anurans, 13. University Missouri Press pp. 351–445.

Spix, J. B. 1824. Animalia nova sive species novae testudium et ranarum. Monaco.

Tschudi, J. J. 1838. Classification der Batrachier. Neuchatel.

Tyler, M. J. 1971. The phylogenetic significance of vocal sac structure in hylid frogs.—University of Kansas Publications Museum of Natural History 19(4):319–360.

———. 1979. Herpetofaunal relations of South America with Australia.—University of Kansas Museum of Natural History Monographs 7:73–106.

———, and M. Davies. 1978. Species-groups within the Australopapuan hylid frog genus *Litoria* Tschudi.—Australian Journal of Zoology, Supplement Series 63:1–47.

———, M. Davies, and A. A. Martin. 1977. A new species of large, green frog from northern western Australia.—Transactions of the Royal Society of South Australia 101:133–138.

White, J. 1790. Journal of a voyage to New South Wales, with sixty-five plates of non descript animals, birds, lizards, serpents, curious cones of trees and other natural productions. London.

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